AUGUST, 1952.

RAILWAYS

INCORPORATING

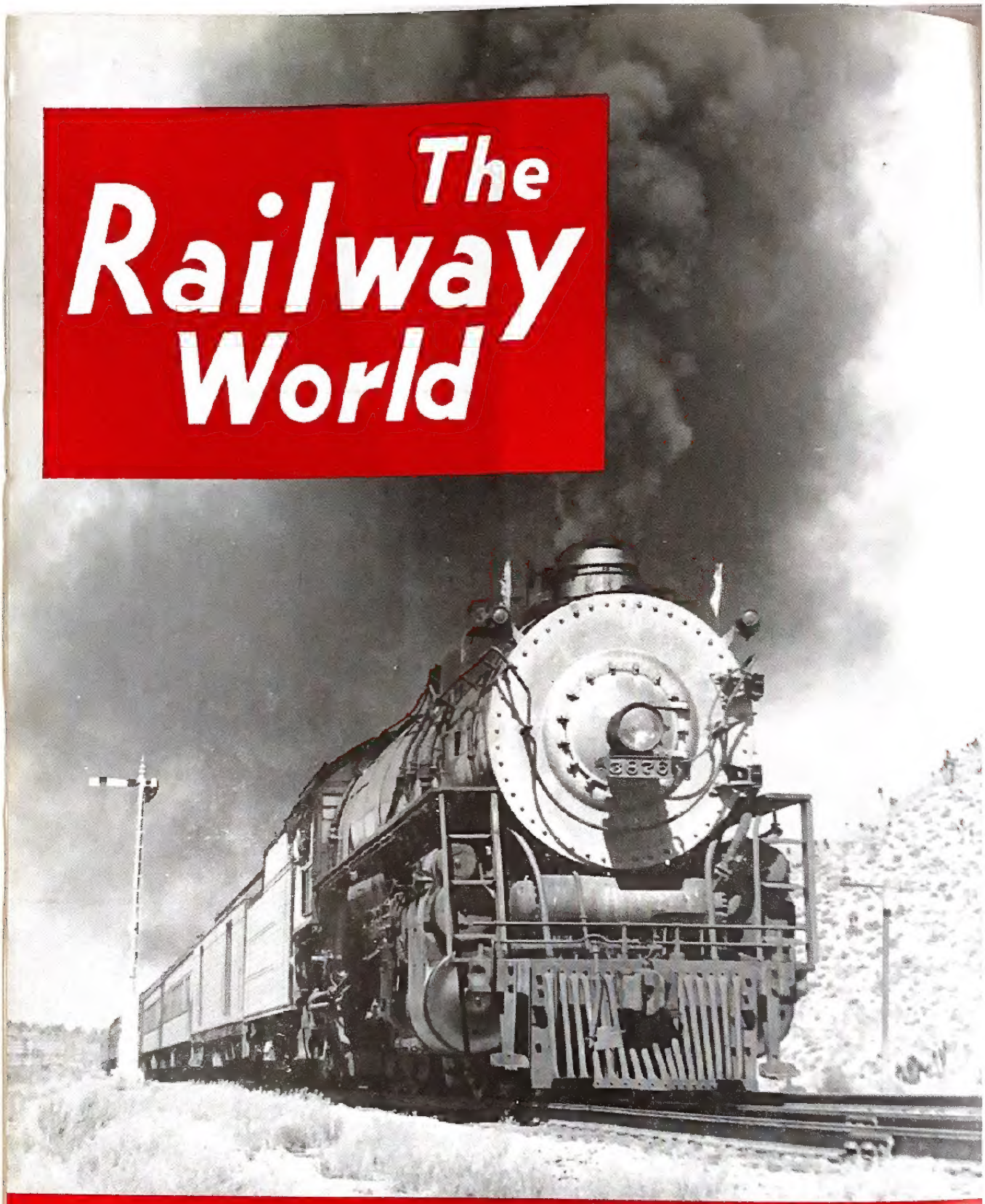
RAILWAY PICTORIAL AND LOCOMOTIVE REVIEW

AMATEUR PHOTOGRAPHIC COMPETITION — LAST MONTH.

CONTROLLED ROAD TESTING • RAILMOTORS OF THE L.B.S.C.R.
THE G.W.R. SAINTS • BRISTOL COAL TRAMROADS

1/6

The Railway World



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Scene on the Welshpool—Llanfair Light Railway showing No. 822. The Earl J. Wyndham, 1st April, 1950.

THE NEW COVER!

WE are assured that "a change is as good as a rest" and with one thing and another many of us feel that a rest would be beneficial. We can't give you the rest, but we can, and are, giving you a change.

As all our regular readers are aware, the title of this magazine is to be changed with the September issue. This, therefore, is the last issue to carry the 'Railways' title. We do not wish to become nostalgic about the change, but we do feel that a "farewell" is not out of place. 'Railways' has earned its rightful place in the railway Press, and THE RAILWAY WORLD will undoubtedly benefit from the goodwill that 'Railways' has, over the years, built up.

Not a little speculation has been made as to the new cover design. Well here it is, and we hope it meets with approval. Red is to be the standard colour from now on, the only change from month to month being the illustration. The design for the cover was not entirely our idea. We had a number of designs roughed out by our artist, and from these we asked a cross-section of readers for their selection. The final design is therefore, largely yours, as it was this design which polled the most votes, over 75% in fact.

Now as to contents. We have already stated that the regular features which have been most popular with readers of 'Railways' will continue to appear. We are not doing anything that will upset this fact. We stress this because we have had a number of letters asking us not to drop this, that or the other, regular feature.

Last month we invited readers to tell us of any feature in 'Railways' that they did NOT like. A few have responded, and we appreciate their co-operation. The invitation is still open and will remain so. Don't hesitate to criticise, only in this way can we be sure that you are satisfied.

Finally then, "Farewell 'Railways'" and "Hello THE RAILWAY WORLD."

LOCOMOTIVE
CAUSERIE No. 145.

Controlled Road Testing.

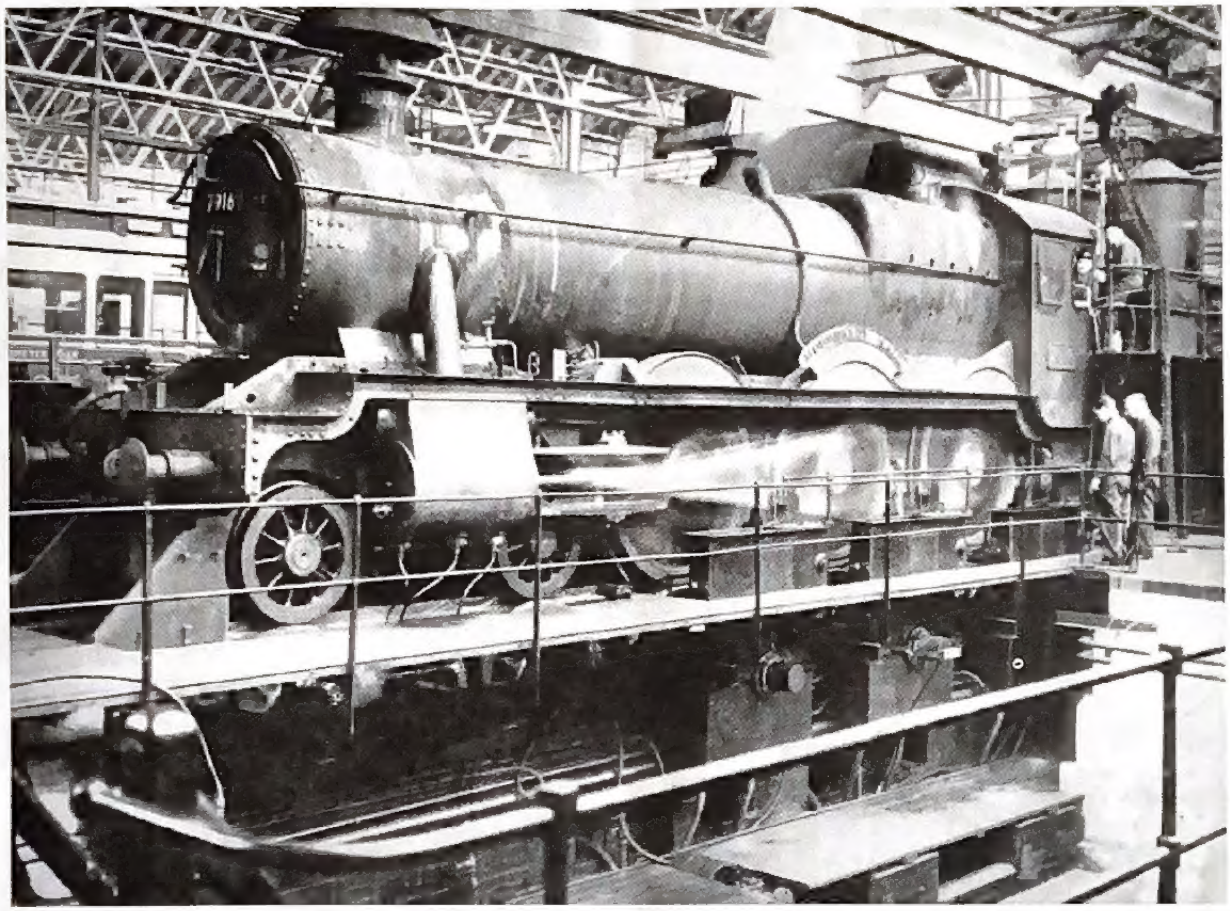
by O. S. Nock,
B.Sc., M.I.C.E., M.I.Mech. E., M.I.R.S.E.

Eastern Region 'B1' No. 61142 on on down fish train leaving Hadley North Tunnel. 21st April, 1951. E. D. Bruton.

IN recent years the road testing of locomotives, with or without the dynamometer car, has come to be regarded as no more than an approximate method of gauging the suitability of any particular class for a definite duty. Variable factors so often enter into trials of this kind that quite large differences in coal consumption per drawbar horsepower hour have been recorded on successive days with the same engine and the same driver and fireman . . . let alone with different engines. The stationary testing plants at Swindon and Rugby, enabling trials to be conducted at constant speed, have eliminated most of the factors that tend to distort locomotive test results, but since nationalisation an entirely new technique of road testing has been brought to a high degree of perfection. This not only permits locomotive tests to be conducted on an altogether broader basis, but is likely to prove of the utmost practical value towards the more efficient handling of locomotives, and the planning of train schedules to secure minimum coal consumption. This method, known as "controlled road testing" was in process of development on the Great Western Railway at Swindon, and since nationalisation it has been adopted as a standard test procedure.

I have previously described tests on which the maintenance of constant speed formed the basis of all data secured. The new method is to maintain a constant rate of evaporation. The most efficient thermodynamic performance of a boiler is secured when the firing rate is kept constant, and while this can readily be achieved on a stationary testing plant it requires infinitely more careful regulation on a road test, especially when travelling over a route of varying gradients. Engines tested by this method are fitted with a special gauge which indicates the volume of exhaust steam passing through the blastpipe. The readings on this instrument, however, form nothing more than a guide to the driver, once the desired rate of coal and water consumption has been established by direct measurement. Interest in this method of testing has recently been increased beyond measure with the publication, by The Railway Executive, of bulletins setting forth the test results with three well known locomotive classes: the Western Region 'Hall,' the Eastern and North Eastern 'B1' 4-6-0, and the London Midland Class '4' 2-6-0. These fascinating documents each include a mass of scientific information on the running of these famous engines, in such closely controlled conditions as to make direct comparison possible. I do not intend to discuss the actual results as between one locomotive and another, beyond giving, to satisfy the natural curiosity of those who may not have an opportunity to study the bulletins themselves, my own broad interpretation of the 'Hall' and 'B1' trials. Using the fuel for which each was designed—the 'Hall' using soft Welsh, and the 'B1,' Nottinghamshire "hards"—there appears to me to be absolutely nothing between the two engines up to about 45 or 50 m.p.h.; after that the honours appear to pass to the 'B1,' though the overall efficiencies shown by both engines are so good that one cannot stigmatise the 'Hall' even in these circumstances.

One of the most interesting points brought out by the stationary plant tests, and confirmed by the controlled tests on the road, is of the great difference between the coal consumption in such controlled tests, and those shown on ordinary service trains, as during the Interchange Trials of 1948. In this article I have chosen to deal particularly with the 'B1' No. 61353, which was tested at Rugby and on the Settle and Carlisle line of



Western Region 'Hall' No. 7916 Mobberley Hall **at full speed on the stationary test plant at Swindon.** British Railways.

the Midland Region. In the accompanying table I have set out the coal consumption figures for the four routes of the 1948 tests, with their corresponding speeds and train loads, and included also in the table is the coal consumption that would be incurred in steady running conditions for roughly the same output of power. In working a service train there are stops to be made, periods of hard work, and others of coasting, and generally there is not much opportunity to settle down to a lengthy spell of steady continuous steaming. It will be seen that whereas the lowest of the 1948 figures gave a coal consumption of 3.32 lb. per D.H.P. hour the general level in steady running, either on the test plant or on a controlled road trial, was below 2.5 lb. Even when developing 1000 D.H.P. at 60 m.p.h. the coal rate is no higher. These are really excellent results, and having established them one hopes that it may be possible to modify train schedules so as to use locomotives nearer to their most economical rates of working.

The particular 'B1' that was tested had previously been to Darlington works for tuning up. She had run some 45,000 miles since construction, and among other jobs done on her prior to the "full dress" trials was a considerable degree of re-balancing. When the 'B1' class was first produced, during the war, considerable surprise was expressed at their being permitted to run on the Great Eastern line. In earlier years the civil engineer had accepted the "Sandringhams" only on account of their reduced hammer-blow, derived from the better natural balancing from three-cylinder propulsion. In axle loading there is little difference beween "Sandringhams" and 'B1s,' and to overcome the hammer

COAL CONSUMPTION — "B1" 4-6-0, using Blidworth coal.

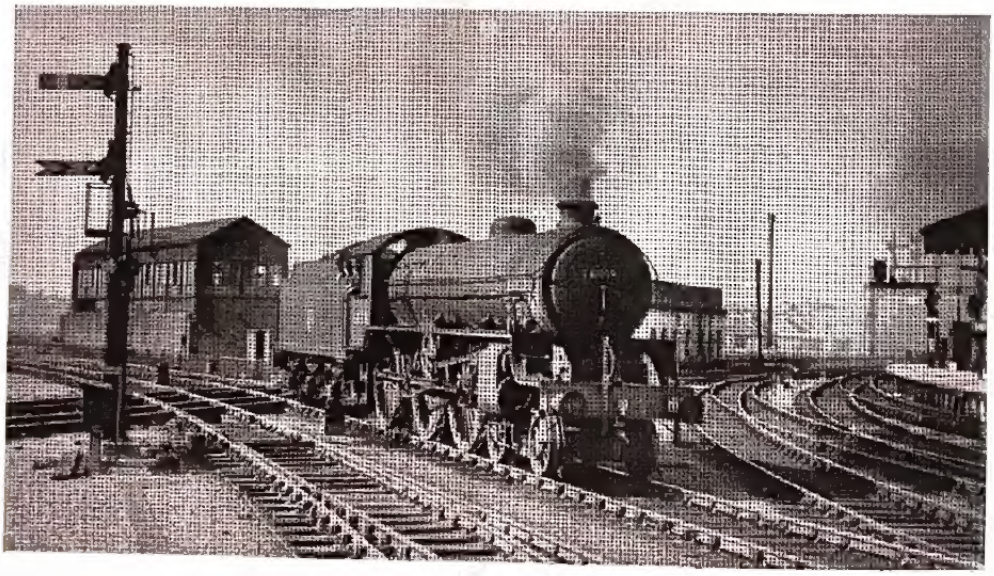
Route.	Bristol, Plymouth.	Marylebone, Manchester.	St. Pancras, Manchester.	Perth, Inverness.	Controlled trials.					
Average running speed m.p.h.	43.4	38.7	44.7	34.0	45	40	45	35	50	60
Average D.H.P.	684	672	579	617	685	670	580	620	850	1000
Coal per D.H.P./hr.	3.96	3.32	3.36	4.01	2.46	2.38	2.55	2.40	2.40	2.50

blow difficulty the 'B1s' had only 30 per cent. of their reciprocating parts balanced, instead of the usual 60 or 70 per cent. As a result their "hammer blow" effect on the track, measured at speeds up to 85 m.p.h. over the viaduct at Manningtree, was slightly less than that of the "Sandringhams." On the other hand the reduction in the amount of reciprocating balance tends to produce a rougher-riding engine, and in certain circumstances a surging motion is imparted to the train. As a friend once put it: "You are kinder to the track than to the passengers." Before the trials of engine No. 61353 the same solicitude was shown to the measuring apparatus at Rugby, for the balancing was modified so that 70 per cent. of the reciprocating parts were balanced, and the engine remained in this condition for the Settle and Carlisle trials.

The bulletin concerned gives some details of two road trials: one in conditions giving the minimum rate of coal consumption, and a second at a higher steaming rate. In the first the feed from the tender was 16250 lb. of water per hour, with a coal consumption of 2160 lb. per hour, and on the second the feed was 18020 lb. per hour and the coal rate 2537 lb. per hour. This rate of working was most accurately sustained throughout the climb from Appleby to Aisgill, and it is most interesting to note the variations in speed that resulted; to compare them with speeds at corresponding points on ordinary service trains I have prepared the accompanying table, to bring into comparison a variety of locomotives. In this table (page 174) runs 1, 3 and 4 were on the dynamometer car trials between London and North Western, and Midland engines soon after the grouping, when I think it may be said that the performance of the Deeley compounds surprised the Midland people as much as it did anyone else! Runs 2 and 5 were made in ordinary service on the Thames—Clyde Express when I was travelling as a passenger, in 1931 and 1947 respectively, and on No. 6 run, with the same train in 1945 I was on the footplate. The speeds tabulated are the maxima and minima at, or near the various key points on this stretch, while to give an impression of the overall result I have tabulated the times from Appleby and from Ormside to Aisgill summit box.

The 15.1-mile stretch from Ormside to Aisgill includes the heaviest sustained climbing in the long pull of 48.3 miles from Carlisle to the summit, 1166 ft. above ordnance datum. After passing Appleby there is a dip to Ormside viaduct, and speed is usually well over 60 m.p.h. at that point; but then heavy climbing begins, with 3¼ miles roughly at 1 in 100 to Griseburn box. Next, the gradient eases progressively over the next 3 miles: 1¼ miles at 1 in 162, just over a mile at 1 in 215-200, and finally after some slight changes, one-third of a mile dead level through Crosby Garrett tunnel. The maximum speeds shown in the table near this point were taken on emerging from the tunnel and crossing Smardale Viaduct. Five miles continuously at 1 in 100 follow, to a point just beyond the south end of Birkett Tunnel, and this stretch is succeeded by nearly a mile of 1 in 302 on the bleak hillside past Mallerstang box. Finally there comes the last pull up to Aisgill—three miles at 1 in 100, before the short level at the summit is reached. Altogether this 15-mile climb up from Ormside can be a gruelling test if things are not going too well on the footplate. It is not as though the collar work begins at Appleby. The immediate start out of Carlisle is heavily adverse to the gorge of the River Eden, and the 20 miles of gradual rise that follow can be no less trying. But on the journeys tabulated all the engines concerned were comfortably on top of their jobs and booked times were being improved upon in every case.

In general it is remarkable to see how closely the variation in speed corresponded to the running in col-



E. D. Bruton.

Eastern Region 'B1' No. 61039 Steinbok running light at York. The photograph was taken prior to the completion of the colour light signalling.

Indicator tests on the "Brighton." A Billington 'Grasshopper' No. 317, rebuilt with large boiler, climbs Forest Hill Bank. H. Gordon Tidey.

umns 7 and 8, in which the 'B1' was kept to an absolutely constant rate of steaming throughout the ascent. On No. 7 run coal was being fired at the rate of 36 lb. per minute, steadily, irrespective of gradients and speed; the regulator was full open throughout, and the driver varied the cut-off in relation to the speed to keep the usage of steam constant as shown on the blast-pipe indicator. The driving was really most skilful, and the actual recorded variation in steaming was so slight as to be almost imperceptible. With the heavier load the coal consumption was 42.2 lb. per minute. The average speeds between Ormside and Aisgill were 39 and 38 m.p.h. respectively, so that the coal consumptions per train mile over this stretch were 55.5 and 66.7 lb. respectively. With the service trains it is apparent that a very marked easing of the engines took place at Aisgill, as the maximum speeds at Garsdale were very much below those of the 'B1.' The driver on this latter engine varied his cut-off by 1 per cent. at a time, and with the heavier train his principal maximum and minimum values were 27 per cent. passing Ormside; 32 nearing Griseburn, 30 at Smardale Viaduct, 40 at Birkett Tunnel, 35 past Mallerstang, 37 approaching Aisgill and 26 at Garsdale.

The Converted Scot No. 6109 *Royal Engineer* showed a very close correspondence with No. 7 run in speeds. I knew her driver well, and he was an excellent engineman with a fine record of fuel economy. The two Midland 4-4-0s (runs 1 and 4) both showed similar characteristics, though slightly slower, though the North Western engines (runs 2 and 3) both appear to have been opened out on the later stages of the climb. At the time of No. 2 run *Sir Gilbert Claughton* was in Midland red, and numbered 5900, and no Midland engine since Johnson's day can have been more superbly groomed and polished than she was on that August day of 1931. The climbing was quietly and comfortably achieved, and it will be noted that the drop in speed between Mallerstang and Aisgill was least of any. The general fall here was between 9 and 10 m.p.h., but *Sir Gilbert Claughton* dropped only 5¼ m.p.h. This run, like No. 5, was on an ordinary service train, and I had no conversation with the driver before or after the run; on the other hand the 'Prince of Wales' class 4-6-0 No. 388, was being worked by a North Western driver in the very heat of post-grouping rivalry with the Midland, and his work, particularly above Kirkby Stephen, was extremely fine. In comparing the speeds with the 'B1' I should add that the performance of the latter did not, by any means, represent the limit of 'B1' capacity; on the Rugby test plant she was successfully steamed up to a feed water rate of 20,000 lb. per hour, with the exhaust steam injector, while on some further tests with the live steam injector the remarkable rate of 25,000 lb. per hour was attained. This latter performance is beyond the range of practical operating, as the coal consumption rose to no less than 192 lb. per sq. ft. of grate area per hour, or 89.5 lb. per minute.

The greatest variation from constant steam demand on the runs tabulated took place on my journey with No. 5565 *Victoria*, and as I was on the footplate I can explain exactly why this occurred. The engine was in grand condition—game for anything—and we had a very keen Leeds driver and fireman. We started dead from Appleby, and cut-off was down to 25 per cent. at Ormside. Now whereas the driver of the 'B1' on No. 8 run started immediately to increase cut-off as he came on to the climb, as one would expect, the L.M.S. man

L. & N.W.R. 'Claughton' class engine No. 1567 Charles J. Cropper. At one time a favourite engine on the West Coast Postal. H. Gordon Tidey.

on No. 5565 left his cut-off at 25 per cent. until we were almost to Griseburn, and then increased straight away to 37 per cent. He reduced slightly to 32 per cent. nearing Crosby Garrett, but then reverted to 37 per cent. crossing Smardale Viaduct. The 'B1' was down to 30 per cent. at this point, and afterwards her driver, increasing by 1 per cent. at a time, had only got to 35 per cent. by Kirkby Stephen. In such circumstances, of course, *Victoria* was holding a magnificent speed on the climb, and we were still going at 38 m.p.h. when we entered Birkett Tunnel. Inside, the engine slipped violently, or we should have emerged at 36 or 37 m.p.h. instead of the actual 31½ m.p.h. We were now getting ahead of time and the driver eased down for the last stage; it will be appreciated that the demands upon the boiler during the climb varied considerably. It was, no doubt, the fact that the engine was steaming so freely that tempted the driver to that spell of hard going between Griseburn and Birkett Tunnel. I had ridden with them throughout from Glasgow and we had several bursts of this kind on the way south.

These controlled road tests do emphasise, however, the point that I have more than once stressed in these articles, over the technique of engine driving, that for the fastest and most economical working of heavy trains the fullest and most frequent use should be made of the reverser. It is not done anything like as much as it should be, even with some of the best enginemen. So many train schedules are so well within the capacity of the engines concerned that drivers get into the habit of leaving the cut-off unchanged for the ascent of heavy inclines. I have one particular bank in mind, which is

(*Concluded on page* 191).

MIDLAND LINE — APPLEBY - AISGILL.

Run No.	1	2	3	4	5	6	7	8
Engine No.	998	2222	388	1003	6109	5565	61353	61353
Class	'999'	Claughton	Prince	Compound	Con-Scot	Jubilee	'B1'	'B1'
Load Tons	320	335	370	370	375	410	343	405
	m.p.h.	m.p.h.	m.p.h.	m.p.h.	m.p.h.	m.p.h.	m.p.h.	m.p.h.
Ormside	65¼	63½	62½	64½	60½	52½	58	68
Griseburn Box	38½	35½	36½	37	37½	31	38	39
Crosby Garrett	48	46½	47	47	49½	45½	47	50
Kirkby Stephen	34½	34½	32½	35	37½	39	38	37
Birkett Tunnel	30	31½	29½	27	33½	31½	33	31
Mallerstang Box	38	39½	40	37½	43	37½	41	39
Aisgill Box	28	34	32½	27½	33	26	32	30
Garsdale	61½	61½	60	60½	60	58½	68	68
Time over—	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.
15.1 miles Ormside to Aisgill	23 26	24 17	23 40	24 15	22 54	25 42	23 05	23 40
17.5 miles Appleby to Aisgill	25 58	26 57	26 18	26 44	25 48	30 33*	25 30†	26 10

† Signal check through Appleby.

* From start at Appleby.

The Great Western Railway 'SAINTS'

BY J. N. ALLCOCK.

OF all Great Western classes, probably none has been a firmer favourite of loco enthusiasts than the '29s.' Their simple lines, handsome brass beading and name-plates, and copper-capped chimneys were much admired, and their front end design was so far advanced that the performance was remarkable at the time they were built, and set a standard for free running at high speed for which G.W. locos have always been famous.

The first 4-6-0 for passenger work was designed by Mr. William Dean and built at Swindon in February, 1902. It had 6ft. 8in. coupled wheels, two outside cylinders, 18in. x 30in., a domeless parallel boiler with 200 lbs. pressure, and was numbered 100. The framing, cylinders and valves (indirectly operated) were different to all subsequent engines and remained so until it ceased to run.

Mr. Churchward, who succeeded Mr. Dean, turned out No. 98 in February, 1903. It differed in having an improved front end design, and a Swindon Standard No. 1 coned boiler, pressure 200 lbs. In June, 1903, No. 100 was fitted with a similar boiler but pressed to 225 lbs. and this pressure was applied to all subsequent engines, which were built as follows:— 171 (1903), 173-8 (1905), 2901-6 (1906), 2907-30 (1907), 2931-40 (1911), 2941-50 (1912), 2951-5 (1913). Five more engines to have been 2956-60 were not built.

In addition to these 4-6-0, thirteen engines (Nos. 172, 179-90) were built as 4-4-2 type in 1905, and No. 171 had been converted to this type in October, 1904. These 'Atlantics' were tried out against the De Glehn compounds which had been obtained from France in 1903 and 1905, but No. 171 was re-converted to 4-6-0 in 1907, the others undergoing the same treatment in 1912.

Thus the 'Saint' class eventually consisted of seventy-seven locos numbered 2900-55/71-90/98, the early examples having been renumbered into the 29XX series in December, 1912.

The Standard No. 1 boiler was first designed with a coned back ring and this pattern was fitted to No. 100 as rebuilt in 1903, and Nos. 98,171-90 and 2904-6 as built. All other engines as built had the later pattern boiler with barrel coned throughout, but some interchanging of the two patterns took place from time to time.

Superheating was introduced to the class when No. 2901 was built with an experimental Schmidt pattern in May, 1906, and in December, 1908, No. 2922 was fitted with a Swindon No. 2 pattern. As from 1909, however, No. 3 superheater was gradually introduced to all No. 1 boilers (both partially and fully coned) and by 1913 all the 'Saints' were so fitted, Nos. 2931-55 when built.

The framing of the engines varies apart from No. 100 already mentioned. Nos. 98, 171-90, 2901-10 had footplating with a square drop at the front end, and Nos. 2911-55 had a curved drop at front and rear. When converted to 4-6-0, Nos. 172/9-90 were also supplied with the later and more pleasing pattern. From November, 1930, new front ends and outside steam pipes have been supplied to the majority of the engines including some of those which previously had square dropped fronts.

There have been other slight variations, the cylinders being 18in. in the early engines, 18⅛in. in a few, and 18½in. for the last fifteen, the latter becoming the standard for all; the wheels 6ft. 8in. to 6ft. 8½in. with slightly thicker tyres, and other minor details outside the scope of these notes.

Two major alterations were the fitting of No. 2925 *Saint Martin* with 6ft. 0in. wheels and side-window cab in 1924, and 2935 *Caynham Court* with R.C. Poppet valve gear and new front end in 1931. The former change was very successful and resulted in the building of the prolific 'Hall' class of locomotive, No. 2925 being renumbered 4900 in 1928. No. 2935 does not appear to have benefitted from its treatment, although no doubt useful data was obtained from its performances.

Most of the early 'Saints' were nameless when built, but these and subsequent engines eventually had names in well defined series. Nos. 171-90 were a mixture of G.W. Directors and Scott's novels, 2901-10 were 'Ladies,' 2911-30 'Saints' and 2931-55 'Courts.' A number of renamings have taken place for various reasons and there were a few different styles of nameplates and mountings, but space does not permit of full details being given here.

When first built the 'Saints' worked from Paddington, Bristol and Plymouth on West of England expresses, and also at Wolverhampton and in South Wales on other main line trains. No. 2902 worked the first 2-hour train from Birmingham to Paddington. The engines continued to work main line trains for many years and it was not until about 1923-4 that they ceased to be stationed at Old Oak Common. In more recent years they have been principally employed on secondary trains from such sheds as Reading, Swindon, Bristol, Westbury, Tyseley, Hereford, Gloucester, Pontypool Road and Chester, although they have frequently taken their turn with top link trains at busy periods.

Many are the fine performances put up by these famous engines including early runs on the "Cheltenham Flyer" made by No. 2915 *Saint Bartholomdw*, heavy work on the Shrewsbury, Hereford-Pontypool section, and tight schedules over various short sections in many different divisions.

Saint David on Stephenson Locomotive Society special. M. W. Earley.

The first withdrawal was No. 2985 *Peveril of the Peak* in 1931, followed by No. 2909/10 in the same year. One or two were withdrawn each year until 1935 and from 1944-1947, but from 1948 scrapping has accelerated and today only ten remain.

The engine illustrated, No. 2920 *Saint David* was built in September, 1907, superheated in October, 1909, and supplied with a new front end in December, 1932. The next date to be recorded will, alas, probably be the final one, and it cannot be long before the 'Saints' will have departed, but they will always remain in the memory of all who have admired them for so long.

FOOTNOTE: On Sunday, 15th June, 1952 the Stephenson Locomotive Society (Midland Area) 'Saint' special from Birmingham to Swindon ran certain stretches at 70-75 m.p.h.

Things to Come

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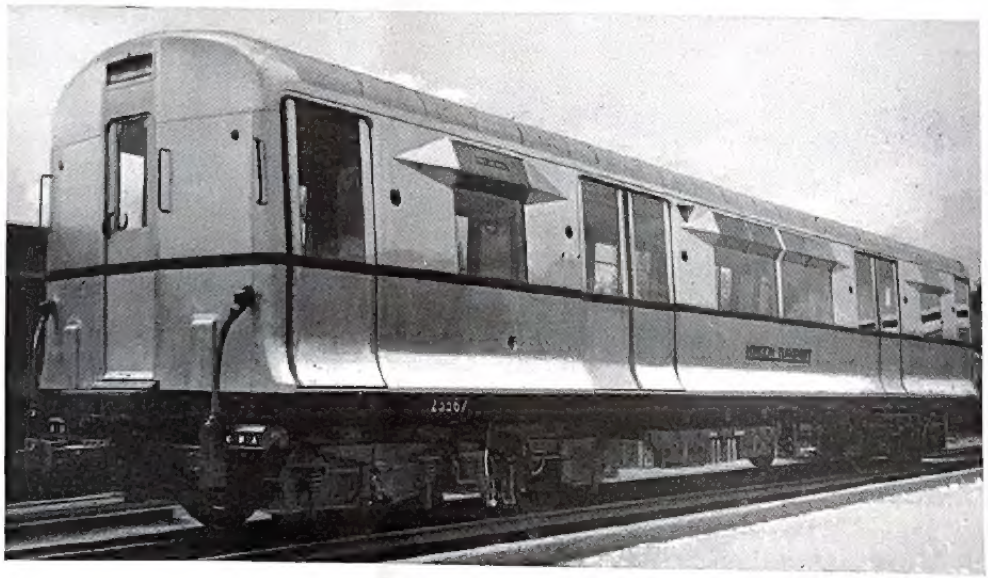


This photograph by courtesy of the London Transport Executive, shows the unpainted aluminium car which went into service on the District line during June.

THE BRISTOL COAL TRAMROADS

by

P. W. GENTRY.

TWELVE years before the opening of the Great Western Railway west of Bath in 1840 first brought the passenger-carrying railway to Bristol, Parliament authorised two horse-operated tramroads to serve as outlets for the South Gloucestershire coalfield lying north-east of the city. The opening of the Somerset Coal Canal some years earlier had served a similar purpose for the pits located south of Bristol but those in the Westerleigh, Coalpit Heath and Mangotsfield area were still dependent solely upon different roads and were thus at a disadvantage which was beginning to make itself felt in loss of trade

There was already a short tramway at Coalpit Heath, about a mile long and connecting the "Coal Works" with the Serridge Engine, and during the first quarter of the 19th century, several schemes were advanced for rail connection with the nearest navigable waterways. In 1804, for example, a line was proposed from Coalpit Heath to the Avon near Bitton, with a branch to the same river near Hanham Mills, while in 1812 and 1814 plans were prepared for a line into Bristol. None of these schemes materialised but in 1827, further efforts were brought to fruition with the result that on 19th June, 1828, the Royal Assent was obtained to two Acts; one (9 Geo. IV, cap. 93) incorporated the Bristol & Gloucestershire Railway Company with powers to construct a "Railway or Tramroad from or near the City of Bristol to Coal Pit Heath in the parish of Westerleigh," and the other (9 Geo. IV, cap. 94) The Avon & Gloucestershire Railway, to extend from "Rodway Hill in the parish of Mangotsfield to the River Avon in the parish of Bitton." Although sanctioned together and actually physically connected, the two undertakings were quite separate entities and had no financial ties with one another.

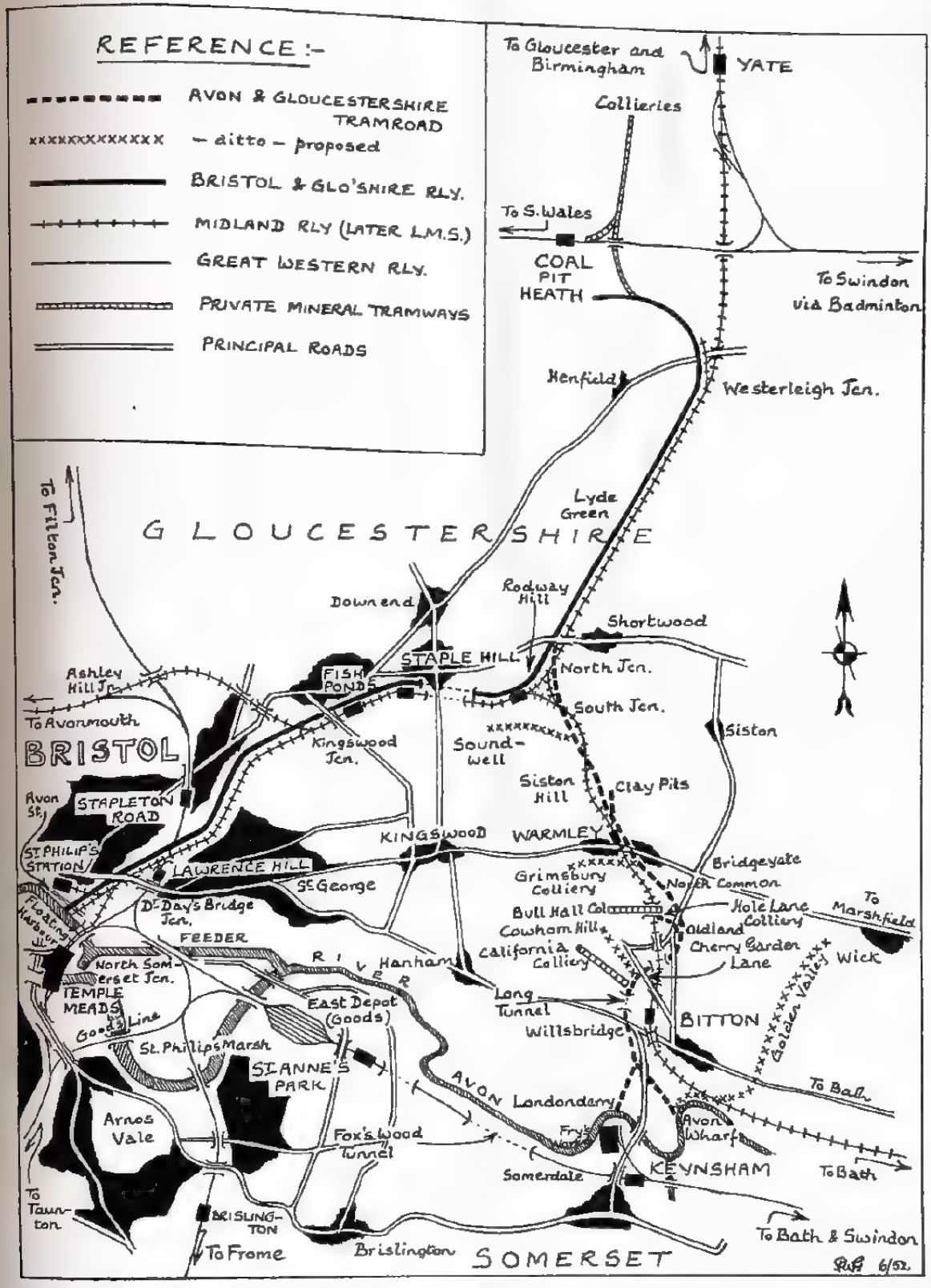
Dealing first with the Avon & Gloucestershire as it was the first to be opened in its entirety, the promoters comprised ten local gentlemen and the Company of Proprietors of the Kennet & Avon Canal Navigation, the latter having the principal control over the undertaking. H. F Cotterell of Bath was the Surveyor. The line was opened throughout in July, 1832, and was approximately 5¼ miles in length. It commenced at a junction with the Bristol & Gloucestershire at a point between Rodway Hill and Shortwood, now identifiable with Mangotsfield North Junction on the London Midland Region line from Gloucester to Bath and Bristol and the site of Messrs. Carson's chocolate factory. From there it proceeded due south across Siston Common and through Warmley, Oldland and Willsbridge to a wharf on the Avon opposite Keynsham at a place called The Backs (later referred to as Avon Wharf).

Access to the collieries north of Shortwood was available from the start as the B. & G. R. was then completed from there to Coalpit Heath and through running was instituted although the other company did not commence its own operations until three years later.

The line was an edge road formed of iron fish-bellied rails cast in 15 ft. lengths and weighing 30 lbs. per yard; these measured 4 ins. deep to the bottom of the web and 2 ins. across the tread. The rails were laid in chairs weighing 8 lbs. each which, in turn, were bolted and keyed to rough-hewn limestone blocks let into the ground. The gauge was 4 ft. 8 ins. The works included a good deal of embankment, cutting and tunnelling through rock in order to maintain an even grade falling slightly towards the river to assist the loaded wagons, and bearing in mind that at this relatively early date, railway builders had but scant experience of their craft, these heavy engineering works, which are still in a good state of preservation, are remarkable for their robust and lasting construction. No form of traction other than horses was ever employed. The course of the line, which is closely followed by the former Midland branch from Mangotsfield to Bath and is three times crossed by it, was described in an illustrated article in 'The Railway Magazine' for December, 1932, page 431.

In 1830, a number of extensions to the line were proposed and surveyed. These comprised branches from Siston Common to Soundwell Spelter Works, Warmley to Grimsbury Colliery, Oldland to Cowhorn Hill and Willsbridge to Londonderry Wharf, and a lengthy extension from The Backs to Bitton and thence northwards through The Golden Valley to Wick; this last would have nearly doubled the length of the tramroad. Several deviations to straighten the route were also surveyed. As far as can be ascertained, however, only the Londonderry branch was constructed, serving an alternative wharf on the Avon nearer Bristol. The "land taken for the Soundwell Branch" is shown on a plan of the line through the Parish of Siston dated 1832 but no positive evidence has been found that this, or any of the other proposed lines were ever built, and although there are signs of a slight deviation on Siston Common, this was more probably caused by the construction of the Midland line in 1869. Maps of a later date, however, indicate several sidings laid in to serve industrial sites along the route; at Siston Hill, for example, there was a spur on the east side to some clay pits and brick kilns, whose products were also conveyed down the line, and two sidings and a loop served Siston Hill Colliery. Spurs were also laid into Crown Colliery, Warmley, and Hole Lane Colliery, Oldland, the latter making an end-on connection with another tramway, probably privately owned, which crossed over the Midland line and ran to Bull Hall Colliery.

On 1st July, 1851, the Kennet & Avon Canal undertaking, and with it the tramroad, passed into the owner-

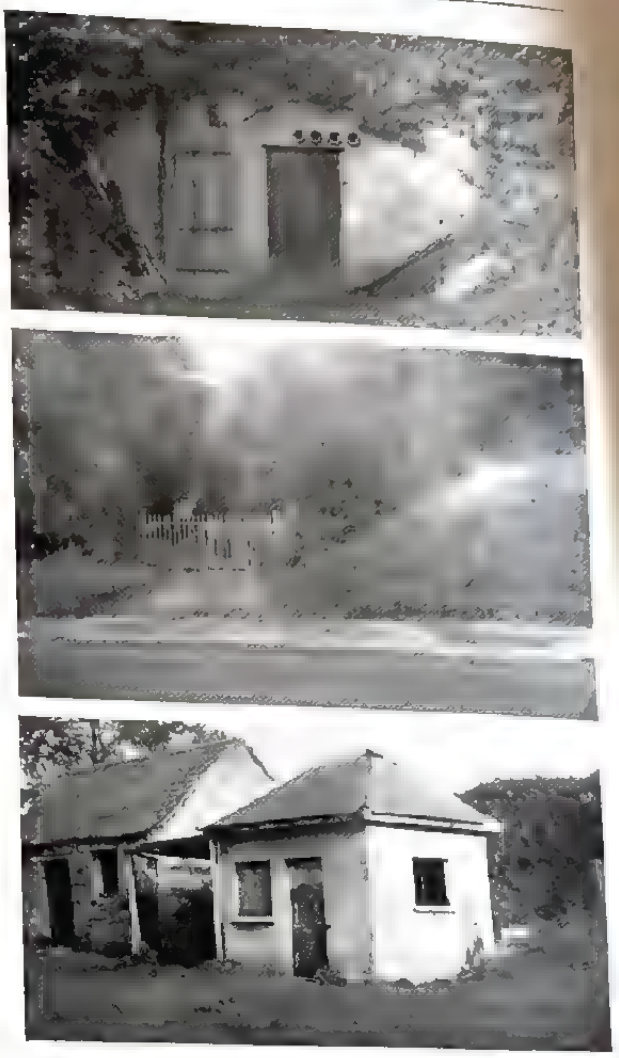

REFERENCE:-
AVON & GLOUCESTERSHIRE TRAMROAD
– ditto – proposed
BRISTOL & GLO'SHIRE RLY.
MIDLAND RLY (LATER L.M.S.)
GREAT WESTERN RLY.
PRIVATE MINERAL TRAMWAYS
PRINCIPAL ROADS
To Gloucester and Birmingham
YATE
Collieries
To S. Wales
COAL PIT HEATH
To Swindon via Badminton
Henfield
Westerleigh Jn.
To Filton Jn.
GLOUCESTERSHIRE
Lyde Green
Rodway Hill
Downend
Shortwood
STAPLE HILL
FISH PONDS
North Jn.
South Jn.
Siston
Ashley Hill Jn.
To Avonmouth
BRISTOL
Kingswood Jn.
Sound-well
Siston Hill
Clay Pits
Avon St.
STAPLETON ROAD
KINGSWOOD
WARMLEY
ST PHILIP'S STATION
LAWRENCE HILL
St George
Bridgeyate
Grimsbury Colliery
North Common
Dr Day's Bridge Jn.
FEEDER
Bull Hall Colliery
Hole Lane Colliery
Midland
To Marshfield
Cowhorn Hills
California Colliery
Cherry Garden Lane
Wick
Floating Harbour
North Somerset Jn.
R I V E R
Hanham
TEMPLE MEADS
Goods Line
East Depot (Goods)
Long Tunnel
Willsbridge
BITTON
Golden Valley
St. Philips Marsh
ST ANNE'S PARK
AVON
Londonderry
To Bath
Arnos Vale
Fox's Wood Tunnel
Fry's Wharf
Avon Wharf
Somerdale
KEYNSHAM
To Bath
To Taunton
BRISLINGTON
To Frome
Brislington
SOMERSET
To Bath & Swindon
RJB 6/52.

ship of the Great Western Railway. By this time, however, many of the pits in the district were being worked out or abandoned owing to flooding and as the output from those in the Coalpit Heath area had largely passed to the main line railways, the importance of the Avon had declined. As a result, traffic over the line fell off to such an extent that in 1865 the G.W.R. obtained powers to close it. These were not put into effect completely but there is no doubt that at some time during the next ten years or so, the section between Shortwood and Oldland Common became disused, although at what date it has been impossible to determine. Certainly it was quite derelict by the early 'nineties although the track was still in place.

Owing to the enterprise of a Kingswood firm at this time, however, the California Colliery at Oldland was re-opened and a tramway " of considerable difficulty and expense " constructed across the valley to join the Avon & Gloucestershire line near Cherry Garden Lane, where a loop and triangular junction were laid in. This branch was some ⅝ths. of a mile long and being an incline, was worked by gravity: it entailed some heavy embankment work at the lower end. By this means, the southern part of the line received a new lease of life and continued to operate until 1904 when this colliery, too, was finally closed down. The rails and chairs over the whole of the line were removed for salvage during the 1914-18 war, though many lengths of the original fish-bellied rail and also some later flat bottom rail from the California incline are still to be seen in fences and stiles near the route. Some lengths of Barlow rail have at some time been affixed inside the short tunnel under Cherry Garden Lane for strengthening purposes but it is not thought that this type of track was used on the line.

The section of old tramroad from Cherry Garden Lane to the level crossing of the Hanham-Bath road at Willsbridge was sold by the G.W.R. to the West Gloucestershire Water Company in 1935 and it is here that some of the most interesting remains are to be found, chief among which is the longest of the three tunnels on the line. This is 468ft. 9ins. in length and was driven through solid rock. The bore varies slightly in size, the width at track level ranging from 9ft. 5ins. to 10ft. 0ins. extreme width from 9ft. 8ins. to 10ft. 2ins., and height from 8ft. 4ins. to 8ft. 7½ins., there is an airshaft near the middle and by virtue of being lined (which the other two were not) this tunnel has been found capable of use. During the recent war it was an air-raid shelter and although its adaptation as a railway museum has several times been suggested, it is now used for the cultivation of mushrooms. At the northern end is a deep perpendicular rock cutting of most impressive proportions and at the south end there was another loop and a straight run through some woods to the main road. A small hostelry adjacent to the level crossing is called " The Railway Inn " and possibly takes its name from the old line, although as the bridge carrying the Midland branch over the same road at Bitton Station is only a ¼ mile away, the allusion could be in that direction, especially as the A. & G.R. was always referred to locally as the " Dram Road."

On the opposite side of the level crossing was Willsbridge Coal Wharf, which had one siding and a substantial stone building containing the weighbridge machinery, and



Top: South portal of Willsbridge long tunnel.

Centre: Site of level crossing at Willsbridge, with long tunnel in background.

Bottom: Old tramway weigh house and stable at Londonderry Wharf, near Willsbridge. Author.

a short distance from there the line divided. The left-hand spur (the original one) crossed under the Willsbridge-Keynsham road and passing through a cutting, now choked with brambles, emerged at Avon Wharf, terminating on the waterside and at right-angles to it; the spot is still marked by a small stone weigh-house and is immediately opposite Messrs. Polysulphin's soap factory. The later branch to Londonderry Wharf crossed pasture

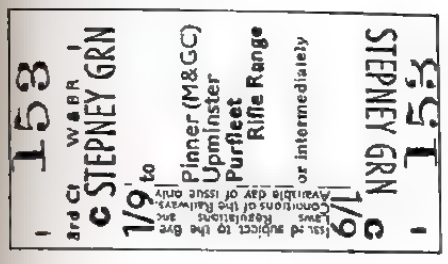
land without any major earthworks and at the terminus, which is opposite the back of Messrs. Fry's chocolate factory, there is a weigh-house similar to that just mentioned and also a small stable for the tram horses. This wharf is believed to derive its name from the fact that coal for Ireland used to be shipped from there. No illustration of the wagons used on the line has survived among known records, nor any description other than the bare fact that they had wooden bodies on iron chassis.

Turning now to the Bristol & Gloucestershire, we find a similar line, 9 miles long which commenced at Orchard Colliery, Coalpit Heath, and after its junction with the A & G.R. at Shortwood, proceeded in a south-westerly direction through Staple Hill (where there was a tunnel 880 yards long), Fishponds and St. Philip's to a wharf on the Floating Harbour in Avon Street, Bristol. It was authorised for the carriage of coal, stone and general goods but the first-named commodity seems to have been the only traffic. The Company was composed entirely of private shareholders and had no affinity with any other public undertaking. W. H. Townsend of Bristol was the Surveyor. The estimated cost was £45,000, four-fifths of which, in £50 shares, had been subscribed when the Act was passed. In 1829, the Bristol Press suggested that one of Gurney's steam carriages should be tried out on the tramway but this was not done and, in any case, the Act contained no powers for the use of mechanical traction or the carrying of passengers. Five years were allowed for completion but in 1834 it was necessary to apply for an extension of time and additional capital, the final cost much exceeding the original estimate. Operation eventually commenced on 6th August, 1835, although as stated, the northern part beyond Shortwood had been used by the A. & G. since 1832.

The permanent way of this line was exactly similar to the other—the gauge being specified in this instance as 4ft. 8in. between the inner edges of the rails and 5ft. 1in. between the outer edges—but the construction was much less arduous and the route considerably straighter. The fall in level from the summit at Staple Hill tunnel to the Avon was approximately 175 feet and the ruling gradient 1 in 71. *(To be concluded).*

This Month's TICKET SPOTLIGHT

by W. H. BETT.



TO most London visitors and even residents, the Underground is just the Underground, and not a few have been puzzled to see at the head of their tickets the mysterious initials "W. & B.R." This was the practice until 1948 on certain tickets issued at four stations, namely Whitechapel, Stepney Green, Mile End and Bow Road on the District Line; though it was always possible to find some which bore the simple District or later London Transport title, and at Whitechapel some were headed "E.L." as the East London Railway Joint Committee was also involved on the lower level. The explanation is that the line from St. Mary's Junction just west of Whitechapel, to Campbell Road Junction at the head of the steep incline east of Bow Road, was the joint property of the District and the London, Tilbury & Southend Railways, whose lines it linked, and was officially entitled Whitechapel & Bow Railway. It remained joint, with the L.P.T.B. and L.M.S. as the successors to the original partners, until nationalisation in 1948, when it passed wholly to the L.T.E.

This ticket is the standard type of London Transport vertical "scheme" ticket as used until some two years ago, now superseded by the "Station of Origin" type which bears no destinations at all. The joint heading is substituted for the usual "L.T.", and the word "Railways" for "Board" in the conditions of issue. We may note the fare code letter "C"—the "P," "Z" and now "H" fares have come in subsequently, but London Transport has omitted all these code letters from its tickets since late in the "C" era.

Railway: Whitechapel & Bow.

Journey: Stepney Green 1/9 Scheme.

Class: Third Class Single.

Date: 26th September, 1942.

Type of Ticket: Edmonson card (vertical scheme).

Colour: Green.

The list of destinations presents some points of interest; the passenger has the option of travelling in a straight line eastwards to Upminster, the end of electrification and terminus of the District service; or if he chooses to go westwards he can reach another joint line (Metropolitan & Great Central) via Aldgate East, Baker Street and Harrow. The third alternative is to proceed eastward but to leave the electrified line at Barking and take the other fork of the L.T.S. towards Tilbury; the limit of the 1/9d. ride in this direction is Purfleet Rifle Range Halt, which was situated between Rainham and Purfleet, and closed a few years ago. Rifle range halts, of which quite a few are, or were, scattered up and down the country, are generally somewhat desolate, breezy and unfrequented places, and at the very farthest remove from the urban bustle of the Underground, so that there is a certain piquancy about finding such a destination on a ticket of this kind.

GLIMPSES OF THE NARROW GAUGE No. 25 (1).

by J. I. C. BOYD.

WHETHER a railway of no gauge whatsoever is entitled to a place in this series is conjectural, but if only on account of its unusualness, it deserves a mention Add to this the fact that references are both scanty and scattered, and that no recent articles have appeared which add to our knowledge, no further excuse is needed. These notes have been obtained by working through contemporary accounts of varied source.

The Listowel & Ballybunion Company (owned and worked by the Lartigue Railway Construction Co.,) was incorporated on 16th April, 1886 (three years before the Light Railways (Ireland) Act) and opened for traffic on 1st March, 1888. Previous to this a full size model of the Lartigue Patent method of construction was erected in Tothill Fields, Westminster (site of a former prison) in July, 1886, having grades of 1 in 10 and curves of 49ft. radius. The Ballybunion line was promoted largely through the good offices of Lord Devon, but the country was sparsely populated and hardly likely to support much railway traffic. The line was intended mainly for the carriage of sea sand, then much used as manure, and shared this distinction with the equally-pioneering Bodmin and Wadebridge Railway, which was used for a similar purpose to a great extent! The route was 9¾ miles long, from a site behind the Waterford, Limerick and Western Railway station at Listowel, through Liselton and Francis Road (opened 1920) to Ballybunion on the coast. A projected extension to Tarbert and Ballylongford was not built.

During the construction of the line it is supposed that the engine used at Tothill Fields was conscripted; this was a somewhat weird affair built by the Societè Tubize and designed by M. Mallet. It had a vertical boiler mounted on each side of the mono-rail, for in the Lartique Patent the rolling stock is of twin-like build straddling a raised trestle on top of which lies the single running rail. Guide rails near the foot of the trestle steady the train during motion. For the opening of the line three locomotives with horizontal boilers were built by the Hunslet Engine Co. Ltd., of Leeds, to M. Mallet's design. This month's illustration shows No. 2 at Ballybunion.

The two boilers were braced together additionally by an overhead girder over the cylinder block, while a central box-constructed main frame contained two independent sets of cylinders and driving wheels, one over the boilers and the other over the tender. When new, No. 1 carried circular number plates on the tender surrounded by the initials of the Company, with maker's details beneath. A rectangular plate on the cab-side read 'Lartigue Single-Rail System. Mallet's Patent.' (So far as I can tell the latter sentence referred only to the locomotive design). In the photograph the single Salter spring valves, sand pot with bracket for the lamp on it, Westinghouse brake reservoirs beneath the boiler barrels—it would be interesting to know how many other Irish lines used the Westinghouse brake, if any—the fact that the positions of Patent and Number Plates have been reversed (as they were on No. 3 also) are notable. The footplate men would carry out dual roles of driver-fireman for the driver proper would be obliged to fire on his side of the trestle. Truly the Trade Unions would have had a thorny problem in deciding status and rates of pay for men who fired two boilers and drove one engine!

The loco power unit was 0-3-0, driven by 7in. x 12in. cylinders, one on each side of the central frame. The tender unit had smaller cylinders 5in. x 7in. driving a two coupled unit. The tender cylinder was connected to a dummy crankshaft which engaged through spur gears with a wheel-less crank set between the wheels. The gears were normally out of mesh but could be put into action through friction clutches worked by a wheel from the tender footplate. The rear cylinders exhausted through individual vertical pipes behind the cab roof in No. 1 but they appear to have been removed on all engines later and photos of Nos. 2 and 3 do not show them. The tender unit was used as a booster, but it was said to be seldom used. These engines would negotiate curves of 100 ft. radius and haul 140 tons on the level; the tractive effort was 2751 lbs. and the total weight in working order about 10 tons. Wheelbase of the leading unit was 5ft. 8in. and the rear unit 4ft. 3in.; 2ft. diameter driving wheels were common to both units. The maker's date was 1888.

(To be continued).

AROUND THE BRANCH LINES

No. 28.

By W. A. CAMWELL.

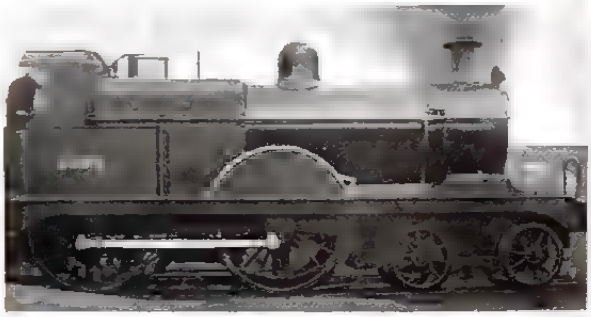
CRAIGLEITH, formerly L.M.S.R. ex Caledonian Railway, on 15th May, 1950, showing 54452 leaving on the 12-38 p.m. Leith to Edinburgh (Princes Street) with a train of ex Caledonian four-wheelers.

MACDUFF, formerly L.N.E.R. ex Great North of Scotland Railway on 5th May, 1950 showing 62275 *Sir David Stewart* on the 5-10 p.m. to Aberdeen. Passenger traffic on the branch Inveramsay-Macduff was withdrawn w.e.f. 1st October, 1951.

Craigleigh and Macduff.

The mail.

Sir,—With reference to the series of Midland photographs on page 116, although the picture of No. 856 shows this engine with smokebox number-plate, when new it had the Johnson style numerals on the cab splasher. The enclosed pictures of my own taking show No. 2606 (later 700) and 859 (later 769) as first built. Note the indicator shelter on No. 859 at Cheltenham on 13th October, 1905. In comparison with No. 2606, one or two Deeley features will be noted. Many of series 850-859 worked on the Birmingham—Bristol main line; they had six-wheeled tenders, but the earlier ones with double-bogie tenders did not get that way. The first *new* engine



to appear with gilt numerals on the tender was No. 860, built in 1905 (later 770), soon followed by Compound No. 1000 (later 1095). As nearly two years elapsed before the general re-numbering in 1907, all sorts of engines carried their old numbers in large numerals on the tender tank; though on the other hand, some re-numbered engines in 1907 still had the brass figures 685 *Princess of Wales* was one, another was 504 (2422 till 1907)—in the old position on the cab sides. Early examples of old numbers on tenders were 4—2—2 No. 94, 2—4—0 Nos. 1288, 1301 4—4—0 No. 139; and I saw a curious combination on a train leaving St. Pancras in 1907, Engine No. 20 (brass figures) with tender 21 (in gilt figures on the tank), a 'Princess' 4—2—2, of course. New engines with "old" numbers were 4—4—0 860-869, 1000-1029, and 0—6—0 275-284 (these were re numbered respectively 770-779, 1005-1034 and 3805-3814).

The number of the goods engine in the middle picture on page 116 is actually 3250 (Neilson 4195/1890): it was rebuilt at Derby in the form shown in 1904: incidentally it shows a renumbered engine with the new number, retaining brass numerals in the old position. Nos. 1877/98, 1901/17/27/58, 2067, 67, 2311 were thus rebuilt in 1903, also No. 1791 of the 4ft 10in class.

The re-numbering caused a little confusion in some instances, as numbers were altered as engines went through the shops, other necessary alterations being done at the same time, to avoid duplication of number: thus when 0—4—4 tank 1280 was altered to 1254, 0—4—4T 1254 had also to be altered to 1258, 1258 to 1262, 1262 to 1236, and 0—6—0 No. 1236 to 3004.. Thus, if 0—4—4T No. 1262 was seen in 1907, which one was it? It was really necessary to examine it closely to find out!

W. Beckerlegge.

Brighton.

* * *

Sir,—Recent discussions of the future of the railways have tended to miss certain vital factors; in nearly all expressions of opinion there have been traces of political partisanship or of historical sentimentalism. Neither a haphazard decentralisation nor an attempt to create "competition" between railway regions will act as a balm to soothe the ills. Many writers, carried away by memories of the bright colours and varied locomotives and stock of former days, wish to return to conditions of ten, twenty, or even fifty years ago—such anachronistic thinking would only lead to a worse situation than at present.

In a country such as the United Kingdom, which has a close cellular railway network with a fairly even density, it is difficult to see how the argument of creating competition can be applied. The competition between east and west coast routes was not true to form when studied objectively. In face of such strong competition from road haulage an attempt to create inter-railway competition would seem particularly ill placed at the present. Decentralisation, which seems feasible and does not imply a creation of competition between regions but rather adjustment to local needs, is the most important consideration in the present discussions. Because of advances in engineering technique and widespread changes in the economic structure of the country, it cannot be carried through by merely recreating the old railway companies, as one of your correspondents suggests. The process must be entirely new in concept. To revert to such old railway companies would be going against the natural process of evolution of the railway network as evidenced by the events of the nineteenth century Small railway units have continually tended to be replaced by larger units; and the small railway unit, with a similarity of conditions through its operating area, is more likely to severe fluctuations in its prosperity than a larger railway with conditions varying widely throughout its area. If any part of the network suffers a lowering of its operating standards, then the whole network will be affected: small railways are thus likely to act as cancers in the network as a whole. Large units lead to a maintenance of a standard despite local differences in prosperity. It must be remembered that the private railway companies of the nineteenth and early twentieth centuries developed in an economy of expanding horizons, not as to-day in an economy whose horizons are slowly contracting.

After careful consideration, the best possible structure upon which to decentralise control seems to be the regional structure as it exists at present. These units are about the right size for British conditions, and they fit into the economic-geographical regionalism of the country well. In the future railways will possibly depend more and more on the rapid handling of long-distance passenger and goods traffic, so that standardisation of equipment and practice will greatly assist the rapid and easy transference of traffic between regions. Autonomy in design of rolling stock and choice of practice in any decentralised regions would surely only lead to a worsening of the economic plight of the railways. Autonomy should be limited to traffic and tariff arrangements, which could best be suited to local regional conditions by a decentralised authority. These powers could be wide-sweeping, but they would not destroy the essential idea of the broader national network. All regional activities could be co-ordinated by a small central authority, charged chiefly with co-ordinating interregional traffic (rather after the style of the Continental U.I.C.).

Decentralisation alone will not serve to solve all the ills of present day railways: the first need is for an injection of new blood. This can be achieved in two ways: first, by raising the status of railway service sociologically; and secondly, by modernisation and rationalisation, which would involve certain capital investment. The first can only be attained by making working conditions on the railways comparable to those of other industries, by attracting the best possible human material into the industry, and by spreading the idea that the railways

are one of the most vital national services. The second idea—of capital investment—could be carried out by placing the railways, as a strategic necessity, on a par with the fighting services, thus making it possible to draw off Defence Programme funds for modernisation, especially electrification and fitting of vacuum brakes to all goods trucks. Rationalisation could best be managed by a study group, whose task would be to develop a five-year rationalisation plan for the whole system. The plan would be to effect long-term saving by short-term investments and expenditure. Such a plan would bring a great advantage to the country and help strengthen the country's defences, not by building aeroplanes and tanks that are likely to be soon outdated but by creating a sound and modern transport system able to stand any sudden strains.

This is by no means an exhaustive study of the problem and not without many faults, but I feel it presents a few ideas that might be worth further thought on the part of your readers.

Cheadle Hulme. Roy E. H. Mellor.

* * *

Sir,—Dr. W. A. Tuplin fails to appreciate that the running of a 140-200 ton train by a saturated engine over the mountainous grades of the Caledonian Line in 1896 was a vastly more difficult proposition than the haulage, many years later, of the examples given by him. But perhaps Dr. Tuplin has never heard of superheating, exhaust injectors, and the influence of heavier and harder rails and harder tyres on performance, not to mention the fact that the Caledonian engines were burning coal of poorer quality.

It would be obvious to a kindergarten schoolchild that the coal consumption over a line with severe gradients will be higher than over the easy G.N. and G.W. main lines, and to that extent Dr. Tuplin's dogmatic assertion as to the coal consumed per draw-bar horse-power hour is completely inaccurate.

Dr. Tuplin gives as his authority for the 'incredible' coal consumption of the Caledonian engines, the very doubtful evidence of a fireman speaking, apparently, many years after the event, and who gave the amount burned by the 'Dunalastair II' class on the Carlisle Road as 88 lb. per mile.

When 772 was indicated with the 2.0 p.m. Ex-Central (then the heaviest train in the United Kingdom), with a load of 305 tons tare, the coal used was barely 50 lb. per mile (probably Mr. Weir's figure is more reliable than that of Dr. Tuplin's 'authority'), a much better effort for a small saturated engine than the quoted examples of G.W. 'Castles' and L.N.E.R. 'Pacifics' running over a much easier road at a later date when, no doubt everything was done to keep the consumption as low as possible.

Dr. Tuplin may, perhaps, be interested to learn that 'The Engineer' stated, "the coal consumption (of the Caledonian engines) will compare most favourably with that of any other locomotives in the world." Despite Dr. Tuplin's "cautious statement." I have never come across any records to prove that the L.N.W. engines were regularly worked harder—if as hard—as those of the Caledonian

Regarding the 'Royal Scots,' Dr. Tuplin's original statement was "Derby applied modernised thinking to the design": this he has now modified to "the actual drawings were made by the builders—and many features—designed at Derby were introduced." It so happens that I have friends who were in the N.B. Loco. drawing office at the time the engines were designed, and are probably in a better position to state the facts than Dr. Tuplin. Glasgow. Montague Smith.

* * *

Sir,— I think all dog lovers must have been delighted by the photographs in this month's 'Railways' taken at Evedge.

It may interest you to know in this connection, that the Deputy Loco. Superintendent of my old railway in India invariably took his dog on the engine with him.

"Paddy" knew his place well enough—on the fireman's seat in the front of the tender—and used to sit solemnly the whole time, though occasionally a large paw on one's shoulder would remind one that he was getting bored and wanted attention. On one occasion the A.L.O. and I took our dog on the engine as well so—including the engine crew of three—there were six human beings and two dogs all in the cab together. The train in question was a fast passenger, and our dog (a friend of Paddy's) stood on his hind legs and watched the line ahead round the side of the cab with intense interest—in the proverbial manner in which engine drivers are invariably depicted.

Hove, Sussex. J. P. Bardsley.

PHOTOGRAPHIC COMPETITION.

This is the final chance to enter for the Photographic Competition which closes on the 30th of this month. For those who have not already seen details of prizes and rules of entry these are as follows:—

The prizes to be awarded are as follows:

First Prize:— 6 guineas and one year's free subscription to *THE RAILWAY WORLD*.

Second Prize:— 3 guineas and one year's free subscription to *THE RAILWAY WORLD*.

Third Prize:— 1 guinea and one year's free subscription to *THE RAILWAY WORLD*.

Three Consolation Prizes of one year's free subscription to *THE RAILWAY WORLD*.

Judging will be carried out at this office by Messrs. M. W. Earley, O. S. Nock, and K. G. Mansell.

The names of prize-winners will appear in the October issue of *THE RAILWAY WORLD*.

RULES:

The competition will remain open until *Saturday, the 30th of August, 1952*, and photographs can be forwarded at any time before that date.

Each entry must include the official Entry Form, printed on the back cover of this issue (this Form will appear with the August issue also) which allows each entrant to forward three photographs. Should the entrant desire to send more than three examples of his work, an extra form will be required for every three additional prints sent. There is no entrance fee, but it should be clearly understood that prints submitted are not returnable, and become the sole property of the publishers. However, should a print fail to gain an award, and subsequently appear in our pages, it will be paid for at our usual rates.

In order to enable the judges to be completely impartial, we ask those submitting prints *not* to write names or addresses on the back. Every entrant will be allocated a number. His name and address will then be filed under this number, and each print marked accordingly. When the judges have arrived at their decision, they will award prizes to the number appearing on the back of prize-winning prints. The name of the sender will then be looked up. In this way we feel that a completely fair contest is guaranteed.

LOCOMOTIVE CAUSERIE.

(*Concluded from page* 174)

commenced usually at about 50 m.p.h. and finished at 35 to 40 and where the top link men almost invariably maintain a constant cut-off from bottom to top. Only a few days ago I was riding over this route with a heavy week-end train load of 515 tons, and with the engine steaming very freely our driver used 20 per cent. cut-off throughout. The bank was climbed very well, but it would have been done much better had the driver dropped the gear 1 per cent. at a time, starting at the very bottom of the incline, and increasing to, say, a maximum of 25 per cent. The demand upon the boiler, and upon the fireman would have been no more, and we could have regained the minute lost earlier by a check that was actually carried through to the end on the run.

SOME SHED SCENES TO REMEMBER.

BY W. A. CAMWELL.

No. 28. Horwich (L. & Y.)

Notes by E. MASON.

Horwich Works narrow gauge shed, formerly L.M.S. ex L. & Y., as at 21st June, 1936, showing, left to right Robin, Wasp and Mouse. In shed Wren.

There were seven and a half miles of 1ft 6in. gauge railway laid within the boundaries of the Locomotive Works of the former L. & Y. Rly. at Horwich. The lines extended into all parts of the works yard and into most of the shops, and were used for the general conveyance of articles from rough castings of the smaller varieties to finished items, from place to place according to requirements.

The rolling stock consisted of eight lilliputian locomotives and an incredible number of hopper shaped wagons locally known as "tubs." The "tubs" were coupled together and to the locomotives by a simple inverted U shaped coupling dropped into appropriate holes at the ends of the vehicles, one of which is clearly seen on the front of the right hand engine in the photograph.

The eight engines had no stock numbers but possessed attractive little names, mostly with hymenopteral or ornithological associations. The names and particulars of the engines were as follows:—

DOT, ROBIN and WREN, built by Beyer Peacock, 1887. Nos. 2823/4/5. WASP and FLY, built at Horwich, 1891. MOUSE, MIDGET, built Horwich, 1899. BEE, built Horwich, 1901.

The principal dimensions were:— Cylinders: 5in. x 6in., Grate Area: 1.78 square feet., Heating Tubes: 40.64 square feet, Surface, firebox: 7.22 square feet, Total 47.86 square feet. Boiler Pressure: 180 lbs. per sq. in. Wheelbase: 2ft. 9in. Weight: 3 tons 11 cwt. 2 qrs. (in working order). Length over Buffers: 8ft. 2½in. Water Tank capacity: 76½ Gallons. (Saddle Tank).

A few lumps of coal were usually carried on a small four-wheeled trailer which also contained a tool-box and a number of spare couplings.

The engines proceeded to the accompaniment of sharp staccato beats from the exhaust and had piercing whistles of a very high note, the use of which seemed necessary at frequent intervals.

They were housed in a neat little shed situated on the north side of the erecting shop block and close to the caustic soda boshes where all the smaller grimy parts from stripped engines were taken for cleaning.

There is in existence an official photograph showing one of these engines attached to a pair of trolleys upon which was mounted a full sized locomotive boiler, but observations and enquiries made over a number of years have failed to bring to light any instance when the transport of such an out-of proportion load was ever even attempted in actual practice; the removal of boilers usually taking place by means of specially converted standard gauge vehicles.

As far as the writer is aware all the little engines except WREN have been scrapped; WREN was seen hard at work early this year newly painted up in standard British Railways black, lined, and complete with a specially small sized "Dog and Wheel" crest.

FOOTNOTE: Mr. B. Roberts has kindly supplied the following additional information: DOT was withdrawn 1930, ROBIN withdrawn between 1/3/36 and 21/2/37, FLY was withdrawn 1930, WASP withdrawn between 1/3/36 and 4/38 -it was seen minus boiler 21/2/37, MIDGET was withdrawn 1933, MOUSE was withdrawn between 1/3/36 and 4/38—it was noted disused 21/2/37, BEE was withdrawn 1930. Messrs. Beyer Peacock used one of these 18in. gauge 0-4-0s without the saddle tank in their own works—it was named DOT also and is believed to be preserved there now.

Societies' News.

THE RAILWAY CORRESPONDENCE AND TRAVEL SOCIETY.

BRIGHTON WORKS CENTENARY SPECIAL.

The all-Pullman R.C.T.S. Special, organised in commemoration of the Centenary of Brighton Locomotive Works will be run on Sunday, 5th October. It is planned to use Marsh Atlantic 32424 *Beachy Head*, running to a 60-minute schedule leaving Victoria at 10.14 a.m., and returning from Brighton at 4.28 p.m. Whilst at Brighton, the Locomotive Works and Motive Power Depot will be visited, and a tour of the Kemp Town branch made behind 'A1X' 32636, the oldest Brighton engine now in service.

The inclusive charge for the trip will be 22s. 6d. This covers return fare to Brighton and Kemp Town branch, Pullman Supplement, and a detailed itinerary complete with notes, maps and gradient profiles. Remittances should be sent to Mr. R. K. McKenny, 46 Friern Barnet Lane, London, N.11. Stamped addressed envelopes are required with applications.

In the event of the tour being over-subscribed, it is anticipated that a second similar tour will be run on Sunday, 19th October, leaving Victoria at 11.8 a.m., and returning from Brighton at 5.28 p.m. Allocation of places on the trains will be in strict accordance with the order of application, preference being given at the same time to those who have already made a provisional notification of taking part.

SOUTH OF ENGLAND BRANCH.

Bishops Waltham Branch Tour. The single-line branch from Botley to Bishops Waltham, which runs through 3½ miles of rural Hampshire countryside, saw its first and only passenger train for nearly twenty years on 14th June when the Railway Correspondence and Travel Society special came down from Eastleigh.

Forewarned by at least three newspapers circulating locally, many people turned out to see the special train, and some 200 persons descended upon Bishops Waltham station to witness the unique spectacle of 'C14' 0-4-0T 30589 arrive with its two coaches of Society members and friends. Over 90 persons were carried, including the driver (now retired) of the last regular passenger train on 2nd January, 1933.

Detonators and whistles gave the train a good send-off from Eastleigh, and passing one farmstead on the branch the travellers were amused to see two gentlemen struggling with large Union Jacks. 30589 attained a maximum of 35 m.p.h. on the main line to Botley—in immaculate lined black with polished whistle and safety valves, and carrying a specially inscribed Southern Region route disc, it presented a never-to-be-forgotten sight.

The tour was planned by the South of England branch of the Society, and was made possible by the good offices of the Southern Region officials concerned. The whole trip was characterised by its pleasant atmosphere, for which these officials were largely responsible.

Hereford, Brecon, and Wye Valley Railcar Tour. On Sunday 22nd June, 48 person took part in the railcar tour organised by the South of England branch.

Railcar 24 was used, and left Bristol (Temple Meads) at 7.00 a.m., and returned punctually at 6.43 p.m., in order to make connections for the benefit of persons who had to travel from London, East Anglia, Kent, and even Scotland.

The route taken was Filton Jct., Yate, Severn Bridge, Lydney, Chepstow, Monmouth, Ross-on-Wye, Hereford, Hay, Three Cocks Jct., Tal-y-llyn Jct., Brecon, Merthyr, Quaker's Yard Jct., Crumlin Viaduct, Pontypool Road, Caerleon, East Usk Jct., Severn Tunnel, Pilning. Motive power depots at Lydney, Hereford, Brecon and Pontypool Road were visited.

The tour would not have been possible but for the excellent co-operation of British Railways (Western Region) officials, who made the many and complex arrangements for the railcar to travel over the route much of which is completely closed on Sundays.

STEPHENSON LOCOMOTIVE SOCIETY

Denbighshire Rail Tour by special Western Region auto train has been arranged by the Stephenson Locomotive Society's North Western Area and the Manchester Locomotion Society for Saturday, 6th September.

The train will leave Wrexham General at 3.0p.m. and traverse the following lines: Wrexham to Brymbo W.R. and Ffrith (farthest practicable point on the totally-closed GW/LNW route to Mold); Brymbo to Minera branch; Wrexham to Rhos and forward to the limit of practicable running on the branch to Trevor; also the surviving stretch of either the Moss or Ponkey lines; due back about 6.45 p.m. Croes Newydd motive power depot will also be visited. Tickets (price 4s. 6d.) and detailed times may be obtained from Mr. G. Harrop, 29, Ludlow Road, Offerton, Stockport, Cheshire. Remittances should be payable to "SLS/MLS" and be crossed "Railtours A/c" and accompanied by stamped and addressed envelope.

(MIDLAND AREA).

On Sunday, 31st August next, the S.L.S. Midland Area, is running a special train behind a former G.W.R. 2-4-0, ex Midland and South Western Junction Rly., from Oxford to Moreton and up the Shipston on Stour branch (closed to passengers 1929) after the arrival of half-day excursions from Birmingham, London and Worcester. As the train is limited to three coaches, a duplicate will be arranged also behind a G.W.R. 2-4-0, PROVIDING intending participants apply without delay to Mr. D. Luscombe, 349, Heath Road South, Northfield, Birmingham, 31, enclosing 10/- for ticket and a stamped addressed envelope.

The three Western Region 2-4-0's are the last of that type in service on that section, and are the last locomotives also, to survive of the former M.S.W.J.R. on main line railways. 31st August will definitely be their "swan song" as latterly they have been stored out of traffic at Swindon.

TALYLLYN RAILWAY PRESERVATION SOCIETY.

On the 7th June, Mr. C. H. Prosser addressed a meeting in London attended by many Light Railway Transport League members on the work of the Talyllyn Railway Preservation Society, beginning his talk with reference to the fact that *The Modern Tramway* was the first transport journal to publish an announcement suggesting that action would be taken to keep the Talyllyn Railway in being (November, 1949). Furthermore, L.R.T.L. members had been active in the Talyllyn movement from its inception.

A film strip shown covered both the condition of the line in recent years and the tasks tackled by volunteers from early 1951 onwards. The ciné film, made by the Honorary Secretary of the T.R.P.S., Mr. P. B. Whitehouse, dealt similarly with the subject, and recorded the high lights of the recent history of the line, such as the delivery of the two ex-Corris engines and the re-opening under the auspices of the Society for the 1951 season. The film proved not only interesting for its subject-matter, but also of a high technical standard in such matters as skilful choice of viewpoint. Mr. Farrell proposed the vote of thanks and the speaker said he hoped anyone supporting the movement, but not yet a member would enrol, as money and labour were both vitally necessary to continue a good start.

Book Reviews

by WINGATE H. BETT.

With *Premier Line: The Story of London & North Western Locomotives* (239 pp., cloth boards, many illustrations and coloured frontispiece, Ian Allan Ltd., 282, Vauxhall Bridge Road, London, S.W.1., 25/- net) Mr. O. S. Nock has "done it again," and has, indeed, produced what many will probably consider his best book yet—which is, of course, saying a good deal. The subject is a distinguished one, for no railway has a more loyal and devoted following than the L. & N.W.R.; and it is one which lends itself to interesting technical controversy. There are those who poke fun at the solemn pretentiousness of the "Premier Line" and its air of conscious superiority; who allege that L. & N.W. locomotives were "rough jobs," apt to throw their fire spectacularly but uselessly up the chimney, whose power was chronically inadequate; and that their own favourite lines could boost greater achievements while beating the big drum a great deal less. But there are many others who will hear nothing against the L. & N.W.R. (which certainly had an air of nobility all its own), and who deplore the Midland influence which supervened so soon after the Grouping. As between these extremes, Mr. Nock in this careful and detailed account of Crewe locomotive devvelopment from the earliest times puts the "case" for the L. & N.W. and its locomotives with earnestness and ability, and the result is a very readable and knowledgeable treatise embodying a real "thesis," namely the vindication of L. & N.W. locomotives in general and the *George the Fifths* and *Claughtons* in particular—which undoubtedly did tackle some very hard work. The book is well illustrated, documented and indexed, with numerous detailed "logs" and a useful supplement of gradient profiles. The locomotive enthusiast cannot afford to miss this important work.

If the London & North Western is *par exaellence* the pre-grouping line which of all others has become a romantic legend, it is certain that the London Brighton & South Coast is the runner-up. Probably the secret lies partly in the fact that both lines had large numbers of named engines, while the personality of Mr. Stroudley and the hypnotic fascination exercised by the indescribable hue of his "engine green" no doubt also had a good deal to do with Brighton egregiousness—a phenomenon otherwise difficult to explain, for physically the Brighton was a little more than a glorified suburban line, with nothing like the ready-made romantic appeal of, for instance, the great Scottish trunk routes. However, there is no doubt about the glamour which attaches to the L.B. & S.C., and Ian Allan, Ltd., have therefore probably done well in devoting to this line the first of a series of booklets under the general title "Railways before the Grouping." Entitled simply *L.B.* & *S.C.R.*, by O. J. Morris, the well-known railway photographic collectir, it consists of 32 pp., with stiff paper cover, and sells at 3/-. The text consists merely of three pages, in the nature of a preface, and the bulk of the book is taken up with a comprehensive series of photographs of L.B. & S.C.R. subjects. These are adequately captioned,

Small Announcements.

Small advertisements: Private 2d. a word, min. 3s.; Trade 4d. a word, min. 6s. Box No. 1s. 6d. extra.

"AXMINSTER-LYME REGIS LIGHT RAILWAY" (with Road Services) illustrated history, 5s. 3d. Also available "WELSHPOOL-LLANFAIR" 3s. 6d.; "VALE OF RHEIDOL" 4s. 3d.; "CORRIS" 4s. 3d.; Rail Speed Pocket Chart, 9d. All post free. Lewis Cozens, 25, Cholmeley Crescent, Highgate, London, N.6.

ELECTRIC RAILWAY MAGAZINE caters for all interested in electric railways. Send 2½d. stamp for specimen and details of Society: Hon. Sec., Electric Railway Society, 245, Cricklewood Broadway, London.

BACK NUMBERS & VOLUMES. 'Railway Magazine' from 1897. 'Locomotive,' 'RAILWAYS,' 'M.R.N.,' 'M.R.C.,' Quantity railway books. New list 2½d. Pinder, 13, Forfield Place, Leamington Spa.

FOR SALE. Copies of 'RAILWAYS', 1940 to date. Bound volumes: 17/6 to £1 2s. 6d. each, according to year. S.A.E. to 32, St. Aubyn's, Hove, 3.

THE MODERN TRAMWAY is a progressive journal, published monthly, price 9d., which is of paramount importance to all interested in light railway transport, in particular tramways. If you have any difficulty in obtaining a copy please let us know. The Light Railway Transport League, 245, Cricklewood Broadway, N.W.2.

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